

# THE MINING AND METALLURGICAL JOURNAL.

VOL. XVII., No. 11

LOS ANGELES, CAL., SEPTEMBER 1, 1897

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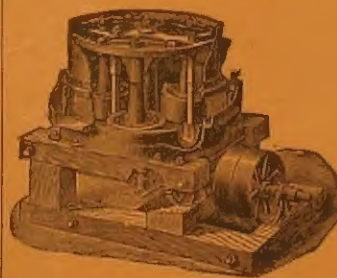
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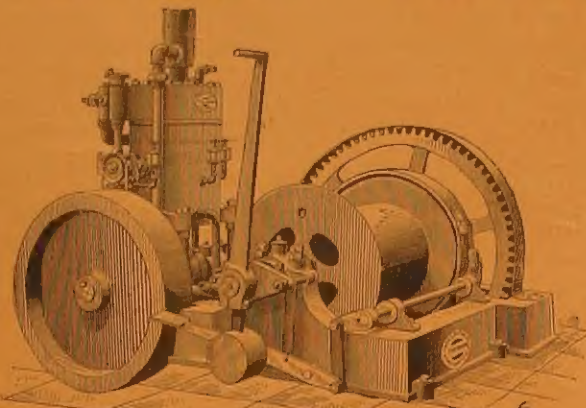
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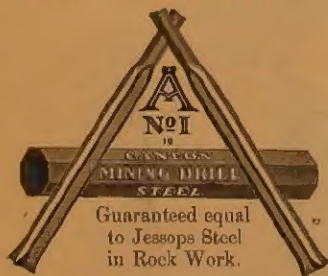
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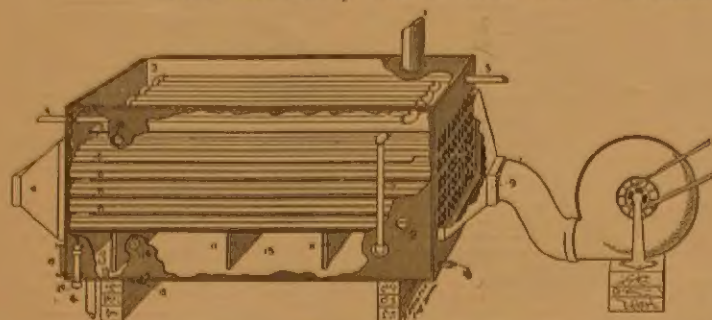
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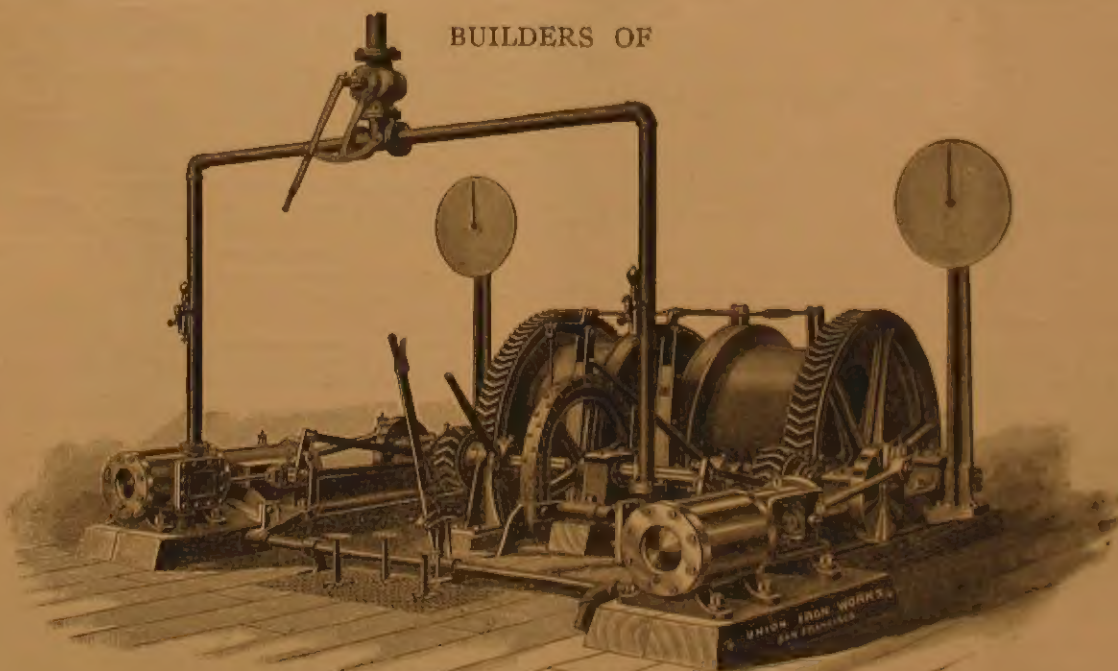
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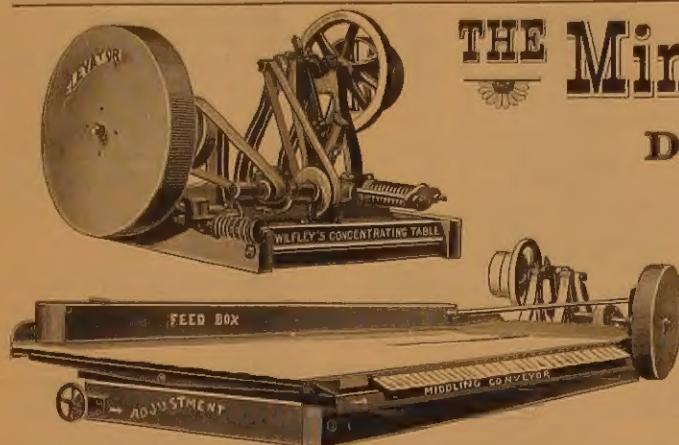
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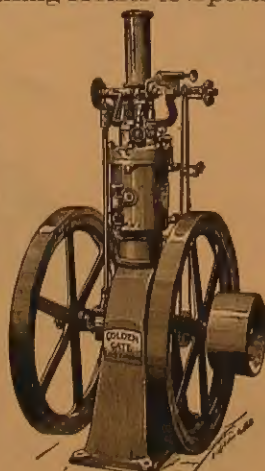
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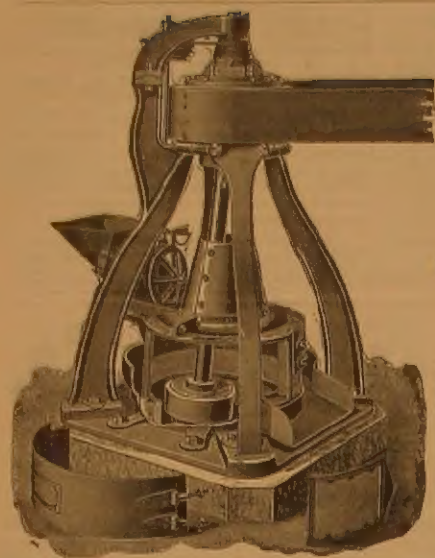
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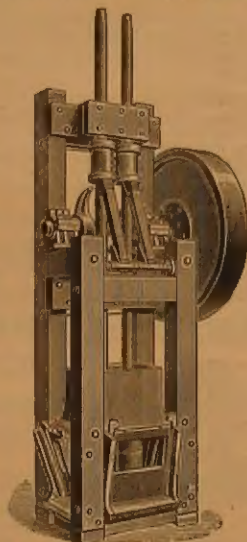
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## ALASKA VERSUS CALIFORNIA.

The recent stamped of tenderfoot prospectors, or would-be placer miners, to Alaska, has not been a loss to this coast. It has to a small extent relieved the labor market of an over supply, and made room for new hands who are content to work at steady wages, the enjoyment of which for too long a time, by the parties whom they have succeeded, tended to produce a spirit of unrest. On the receipt of news of the discovery of the rich spot at Klondyke, they got the gold fever, gave up good positions in all lines of business, and have gone north to cool off—mining frozen ground and waiting six or more months to have it, a process which is well calculated to cool the thirst for "the big fortune in a few days." The excitement has stimulated prospecting in our own sections, and new finds are the result. Trinity county has produced as good, if not better, returns in value, and in less time, from a new find on Coffee Creek, than can be done from frozen ground in Alaska. The rush to this section is rivaling that for Alaska.

The remarks we made in last issue and that preceding it, in which we advised the industrious, intelligent prospector, who valued his health and comfort to stay in the western mining states, and leave the task of prospecting a snow bank in Canada to French Canadian, Esquimaux, and other grease eating Indians, as he could do as well in our own mining sections, has proved true in shorter time than it takes to go to test the miseries of Alaska. The customs officials of Canada intend that the American prospector when he crosses the line will be squeezed to the dividing line between robbery and honesty, by a Liberal, Free-trade Government by profession, but whose policy is to kill the American goose who is so foolish as to hunt for gold in Canadian territory, when he has better hunting ground at home.

## MARKING PATENTED CLAIMS.

The system of marking patented claims in the western states at the present time is not as perfect as it ought to be. This fact is the cause of much annoyance, and at times expense, to prospectors and strangers who are not acquainted with the district. The neglect of owners to keep up monuments and posts and to see that the lines can be easily followed or traced on the ground is as necessary after patenting as it is before; but, unfortunately, too many owners of claims which are patented pay no heed to this matter. They have their patent, and that ends it. The recent motion in Congress to have mining claims fenced, if made to apply to patented claims only would not be a hardship, for if a claim is worth patenting, it ought to be worth marking, or the expense of having it fenced, or at least properly marked. Monuments are not always built in a manner, or of the material, which will stand forever without being looked after and rebuilt. Wooden posts decay in a few years and are easily destroyed or lost. A square but rough or uncut stone set on edge, and marked with a number, as some are, is not easily seen unless near a monument. The best post which can be used is one made from inch or inch and a half diameter iron pipe, with the top 6 or 8 inches made square to receive figures or marking. It can be marked with a chisel or punch M. L., N. E., or M. L., N. C., or which would read, mining location, north east corner, or mining location, north center post. It can be placed in solid rock, by drilling a hole to receive it, and being more durable than wood, any marks remain on it for a very long time. Stones can be built around it where that is desired. This is the best kind of post to use for township or other surveys, on account of its being indestructible, easily marked and easily recognized, which is not the case with wooden posts. Before a claim is patented, or prior to its being patented, notice of intention is posted on the claim, but after the patent is issued, the notice soon disappears, and there is seldom any notice at a shaft or opening to say that the name is \_\_\_\_\_, and that it is patented property. In the case of a mine under operation this is not necessary, but in case of abandoned mines, or those not working, it is to them that the remark is made. The name of the claim, and the fact that it is patented, ought to be posted or painted in a prominent manner at the shaft, tunnel or opening. If any one doubts the necessity for better marking of claims, he had need to take a trip into some one of our at present abandoned silver districts and find out the cause of these remarks.

## WATER FOR IRRIGATION AND MINING.

In the dry or arid states of the Southwest, the water problem naturally divides itself into five classes of operations, due to the magnitude of the enterprise or work required, and the extent to which such water is to be of benefit to the people:—

1st. This class may include storage reservoirs and long canals of the largest kind, and ought to be undertaken by the Federal Government, as the enterprise is of such extent that it will benefit more than one state or county, and make Indian Reserves, or the Indians on the Reserves, who are a public charge at present, a self supporting people.

2nd. Works of benefit to one state only,  
and of less importance than the first class.

and may include smaller reservoirs, canals, and artesian well systems.

3rd. County improvements, which benefit and are located in more than one township, and supply several districts or mining camps.

4th. Township or district operations for small sections or one mining camp.

5th. Works of private enterprise or ownership, on freehold property, for the benefit of one corporation or party, and the improvement of private property or mines.

The necessity for a change in our laws to regulate water development, supply and use, under these five different classes of enterprise or systems, is only too apparent from the numerous failures under the Wright Act, and to take the water systems of the several states, counties or townships or districts of the southwest out of the ownership of corporations, and make them all government or municipal works, operated for the benefit of the people. The numerous instances where the water has been cut off, or the price of it made excessive to those using it, under the operation of the Wright Act system, makes a change in our laws regarding the supply and control of water a matter which cannot be neglected, if settlement and mining are to be encouraged in new sections.

The Federal Government has made certain timber reserves, for the purpose of stopping the flow of the rainfall and evaporation of the moisture in the mountain districts, and thereby aiding in making the annual flow of mountain streams more uniform at all seasons. This is a wise provision as far as it goes, but it is a very poor half-measure of protection to secure a continuous water supply.

To show the general character of the timber reserves of Los Angeles and San Bernardino counties, we print in this issue two views of the Tejuanga Gold Mines, Los Angeles County reserve, one looking east and the other looking west, both of which show only brush-covered hills, which are not clothed with that class of verdure calculated to retain moisture. Without an organized system for reforesting these reserves, such a do-nothing policy is not consistent with the intelligence of the inhabitants, or capable of effecting the purpose for which they are intended.

The mining interests of our mountain sections and the ranching interests of the valleys demand that the annual rainfall be stored in reservoirs for future use. History tells us that the custom of the Anglo-Saxon race has been, when not satisfied with the country they were in, to damn it; and that is the policy of reserve of the fluid surplus which our mountain and desert sections of the southwest require, but in the form of larger or smaller dams and reservoirs, to be built as a government, state, county or municipal undertaking, according to the extent or importance of the work required. For our legislators and law makers to neglect this social question in our industrial development, and relegate or leave it to be undertaken by corporations and private enterprise, whose officials oppress and rob the consumers, is to neglect a public trust placed in them by the people.

The pre-historic inhabitants of the southwest have left us traces and monuments of their gigantic storage and canal systems, on the Gila and Salt Rivers, in Arizona, which must have been conducted as a community or government enterprise, so large and far-reaching was their extent, and is it too much to ask that the ancient example be taken, and our water system, like our roads, be made a government or municipal work, as has been



done in Australia, under similar conditions of climate, mining and agriculture.

The Geological Survey staff have already surveyed and mapped out reservoir sites in numerous districts, which work requires the control of Federal, State, County or Municipal authority to make it available for the use of the people, and should not be left to be controlled by private enterprise. The time to act is now, before these valuable power and water reservoir sites have passed into the control of incorporated companies.

## CORRESPONDENCE

### CALIFORNIA.

#### TUOLUMNE MINING NOTES.

This grand old county shows no abatement of continual new discoveries, more especially in the East Belt. Daily reports are verified by the uncovering of rich quartz veins—those already opened can be counted by the hun-

#### THE ALABAMA.

A station is being cut at the 300-foot level. The prospects in this mine are exceedingly good for a very valuable property. A mill will soon be erected.

#### THE DUTCH.

Nothing fresh to report. Good rock continues to be sent to the mill, which is continuously pounding away. A brick structure is being erected for a fire-proof office—a requirement most necessary.

#### THE TRIO.

The three-compartment shaft, No. 2, is now sunk 73 feet. The machinery for this shaft will be ready to start in about a week. At No. 1, drifting is in progress.

#### THE GOLDEN RULE.

The 300-foot level still shows free gold in the quartz being mined. The other drifts show up as well in value.

is to hand. When in full blast, the output of gold will surprise even the knowing ones.

There are many other mines in this section giving splendid prospects. Space will not permit of further mention on the Mother Lode, but the Tuttle town mines will be mentioned next issue.

#### The Middle Belt.

#### THE GOLDEN GATE

is flourishing as usual to the most perfect satisfaction of the owners.

#### THE GERRYMANDER

employs some eleven men opening up their rich veins. This is a sulphuret mine of considerable richness.

#### THE SHARWOOD PROPERTY.

A rich vein has been struck, an extension of Gerrymander—developments are in progress.



THE TEJUNGA GOLD MINES—LOOKING WEST

dreds. The Mother Lode belt we find, from actual examination and visitation, the same prolific output. The mills are all running continuously.

#### The Mother Lode.

#### THE RAWHIDE

continues, as usual, its vast output of the precious metal. Stopping from the 800 and sinking below the 1000-foot level is in active progress.

#### THE RAPPAHANOCK

is showing up well in their crosscut from the 600-foot level. Large ore bodies of payable rock is being discharged.

#### THE ALAMEDA.

Very good rock was brought to grass last week. Everything running smoothly.

#### THE TARANTULA.

Cross cutting at the 150-foot level is showing up rich rock.

#### THE HELENA.

A cross-cut tunnel has been entered 100 feet. The ore to view shows free gold. This mine is south of Jumper.

#### THE JUMPER.

Everything at this mine predicts continued prosperity. The last clean-up was exceedingly rich—most satisfactory to the syndicate of owners.

#### THE EAGLE AND SHAWMUT.

This property is fast developing into a bonanza. Ten more stamps are about to be added, as the ore bodies are not only increasing in size but also in value.

#### THE STANLEY GROUP OF MINES.

This splendid group of mines has been bonded to a New York syndicate. The ore bodies are simply immense. A large plant will shortly be erected. The mines are well located for power—either water or electricity

#### THE OLD VIRGINIA M. M. AND POWER CO.'Y.

Carpenters are at work repairing hoist, buildings, and the waterwheels, preparatory to unwatering their shaft. This is a new incorporation of an old mine. The company has about 50 acres of patented land. Will give further notice shortly.

#### The Limestone Belt.

Capt. Colby has been erecting machinery—is stopping upwards on good prospects. This mine took out a \$40,000 pocket a few weeks since. We shall soon hear of further finds.

#### THE BONANZA.

This mine is in active operation. Power used is compressed air. A number of men are employed. This mine has produced nearly two millions of dollars.

There are many other mines on this belt that are producing largely.



**The East Belt.****THE JUNCTION, SOULSBYVILLE.**

Reports satisfactory.

**THE BLACK OAK**

still producing largely. Their 20-stamp mill running day and night. Shaft 800 feet deep. Vein 11 feet. Assays value at \$50 per ton. Their cyanide plant is in full operation. Selected rock is being shipped to Selby & Co.—value \$100 per ton.

**THE GOLD BUG.**

Have just completed boarding house and rooms for sleeping. Sinking on their new shaft is in progress. Rich vein.

**THE DRAPER.**

This rich old mine has again started up in full blast. Some needed repairs have been completed. Drifting north and south from the 300-foot level.

**THE SOUTH EXTENSION OF MODOC.**

Vein same size as Modoc. Tunnels are being entered, thus giving cheap facilities for working. Value, by assay, \$8 to \$10 per ton.

A nugget was found in the Dondero mine, Yankee Hill, in cleaning up the sluices, being a gravel proposition, value \$19.30.

**THE PROVIDENCE.**

The main tunnel is entered 300 feet, at 150 feet from the mouth. A winze has been sunk 105 feet, at the bottom of same a vein shows from 8 to 9 feet, of high grade rock. The company contemplate sinking a main 3 compartment shaft, when drifting on the chutes will be extended north and south. Very little rock has been actually broken out, but from assays made, a large number give returns from \$200 to \$1000 per ton. Even some of the sulphurets assayed over \$10,000. The free gold is intermingled with the sulphurets, similar to Dead Horse, of which it is an extension south, although not directly in

**The Court found as follows:—****I.**

That the Deed of Trust conveyed the legal title to the trustees.

**II.**

That the first cause of action in the complaint of the Free Gold Mining Company could not be sustained, because the Trustees had the legal title, and for them to succeed in ejectment, the plaintiff should show a superior title, which they could not do in this case.

**III.**

The second cause of action to quiet title could not be maintained as pleaded, since the evidence showed the adverse interest claimed by the Trustees was the legal title and superior to any right possessed by the plaintiff.

**IV.**

The third case, that is, waste was merely ancillary to the first two causes, and therefore could not be sustained on its own basis, especially as the evidence showed the defend-



THE TEJUNCA GOLD MINES—LOOKING EAST

There are many other mines in this district—working full shifts, with exceedingly good prospects.

**THE CUTTERS MINE**

have just cleaned up \$1800 from 24 tons of rock—or \$75 per ton.

**THE YELLOW JACKET, OR OLD EASTON**

is taking out exceedingly rich rock—\$50,000 has been extracted up to date. It is rumored that it has been sold for a big figure.

**THE DEAD HORSE.**

This mine runs a 20-stamp mill, with concentrators, etc. At the 1400-foot level is found the richest rock yet discovered. The vein is 14 feet wide. It is a dividend payer.

**THE MODOC**

has a 30-foot vein, and never less than 8-foot. The rock is good. Large quantities are now ready for the mill—which is to be erected at once.

contact. There are 25 men employed in this mine and Consuelo, both being operated by same company. The Providence is looked upon by expert miners as a promising bonanza.

**ARGUS.**

LOS ANGELES, CAL., Aug. 24, '97.

EDITOR JOURNAL:—Briefly I desire to report the result of the trial of the case recently brought by the Free Gold Mining Company, (successor of the Golden Cross Mining and Milling Co.) against the Trustees.

This was a case wherein the Free Gold Mining Company set up and attempted to prove the invalidity of the trust deed given for the purpose of securing the debts of the Golden Cross Mining and Milling Co.

The hearing occupied the attention of the Court, and an army of legal talent on both sides, from the 12th to the 19th inst. inclusive, Judge Torrance presiding, in Department One, San Diego.

ants were in possession as Trustees clothed with the legal title.

The judge, however refused at this time to dissolve the injunction or to discharge the receiver, in spite of the fact that there was no case before the court, that is, no valid complaint and nothing to predicate the process on, but he did grant on the application of Mr. S. Shortridge, attorney for the plaintiff time to file an amended complaint within ten days, and meanwhile to continue the motion to dissolve for hearing until after the amended complaint.

The only reason given by the judge was that it seemed probable to him that the right of the trustees to operate the mines after the expiration of 15 months ceased, and the amended complaint might be sustained on that theory—if sustained, the result would be merely to reappoint the receiver.

To avoid the rapid changes of possession, he thought it best to leave the receiver in possession and merely continued the motion.



In regard to this ruling of the court, the Free Gold Mining Company is certainly placed in an embarrassing position.

The attorneys for the trustees urged a speedy trial and obtained Sept. 28th as the day set for a complete trial on the merits of the case and to render an accounting.

The attorneys of the Free Gold Mining Company have filed a notice of appeal from the judgment rendered by Judge Van Dyke, in Los Angeles, in favor of the trustees last June, when receiver Stewart was removed.

It is our attorney's opinion that this judgment is not appealable.

Of course, as the case will be tried later on, it is perhaps hardly in order to anticipate final decision, but, all things considered, the trustees feel that they have made a winning.

In the first place, the trust deed has been declared valid—notwithstanding the oft repeated opinions of lawyers who were consulted by several of the creditors, and so vigor-

#### A MODERN MILL.

One of the most complete plants that has been constructed in the republic of Mexico is the Arianena mill, at Guanacevi, recently erected by the Compania Industrial Mexicana of Chihuahua, for the Compania Restauradora del Mineral de Guanacevi. The machinery was all built at their extensive foundry and machine works in Chihuahua, Mexico.

It has formerly been customary among mine owners in Mexico, when needing mills, to import everything in the way of machinery, but the time has now arrived when a complete and up to date mill can be furnished by Mexican manufacturers.

Mr. J. M. Wilson, the general manager of the Compania Restauradora, is a gentleman who has built and operated mills for many years, and is a hard man to suit. He has expressed himself as entirely satisfied with every detail of the new plant.

through the washers and agitator, where most of the small values remaining after leaving the amalgamating pans are saved. The capacity of the plant is 50 tons in twenty-four hours.

There are five mills in the district of Guanacevi with a capacity the same as the Arianena, but none are said to equal the new plant in efficiency and economy.

The same difficulties have been encountered in Mexico as in the United States in regard to the erection of proper machinery to economically treat low grade values, and after the desired panacea to work ores by has been discovered, it is often difficult to obtain a plant that will save the percentage guaranteed. The growth of the Compania Industrial Mexicana has been phenomenal. Started only a few years ago, it was first necessary to overcome all the prejudices and old-fashioned ideas about it being necessary to import everything, in order to have a high state



THE ARIANENA MILL, AT GUANACEVI, MEXICO

ously assailed by the Free Gold Mining Co.'s lawyers.

We also think that the sky is now clearing, and that before very long the property will again be in the possession of the trustees, unless in the meantime the Free Gold Mining Company, or some other company, will step in and liquidate all the indebtedness; but if the property is to go to a sale, and the value lies therein, we feel that all of the creditors will get their claims in full more surely by the course pursued by the trustees than by any other way.

We simply give you this information so that you may be advised as to how this long drawn out trust is trending, and also that you may be posted as to the true condition of affairs, notwithstanding the erroneous reports that find space in the papers, emanating from sources perhaps not favorable to the creditors' or trustees' interests.

Yours truly,

W. A. DRISCOLL, Secretary.

The mill, as shown in the illustration, is placed conveniently on the side of a mountain. The machinery consists of one Corliss engine, of 150 horse power, 3 boilers of 60 horse power each, 30 stamps, 2 roasters, 2 crushers, 10 amalgamating pans, 5 pans for washing, 1 agitator, 1 clean-up pan, mercury elevator, 2 elevators for crushed ore, and a complete electric plant.

The ore is conveyed from the mine, a distance of 3300 feet to the mill on a tramway. It is first dropped through the crushers, from where it is automatically distributed, to the ore bins, after which it is passed to the driers and is then conducted automatically to the feeders. From the batteries, where 40-mesh screens are used, the pulp is carried by screw conveyors to the roasters and from there to the cooling floor. After the cooling process is completed, the amalgamation takes place in the pans, where most of the precious metals are recovered, the tailings are then put

of efficiency, and the progress was necessarily slow, but Mr. Juan A. Creel, the manager, determined to build only the best, and have his work for his advertisement. He fortunately had ample capital to operate their plant and carry out his theories.

Today the Compania Industrial Mexicana have machine shops and foundries as well equipped as any of the machinery manufacturers in Europe or the United States, and manufactures everything needed for the successful operation of mill, mine, or smelter.

The starting of operations at the new mill in Guanacevi was the occasion of a grand reception tendered to the builder, Mr. Juan A. Creel, by all the representative mining men of the district.

The management of the Spokane Fruit fair propose to add a first class mineral exhibit and invite the exhibition of ores from Southern Oregon.



## Miscellaneous Mining News.

## ARIZONA.

## Columbia Smelting Co.

About two and a half miles below Crittenden, south of the railroad, the Columbia Smelting Company have erected the most complete silver-lead reduction plant to be found in Arizona. This work was commenced under the name of the Empire Smelting company, but for reasons only known to themselves the corporation was disincorporated and reincorporated under the name of the Columbia Smelting company. Although it is not implied in the title the company mine as well as smelt. They own and work the Hardshell and old Flux mines, two noted producers of lead and silver ores.

The production plant is modern in construction and complete in all its details; or, in other words, it is within its full meaning a strictly first class plant. There is an air of solidity and permanence about it that is seldom found in a new camp. The "I have come to stay" air impresses itself most favorably on the visitor.

The furnace itself is built against a hill for convenient working, and is of 100 tons capacity. When visited by the writer week before last it was in full blast and everything working as smoothly as if on a ball bearing. Although in operation but a few days one carload of silver-lead bullion had been shipped, two others were staked on the ground and more rapidly accumulating. The ore used to produce this bullion was from the Flux and Hardshell mines above referred to. The coke comes from New Mexico, as does also the iron ore used for fluxing. The limestone used for like purposes, is blasted from a great reef in the Sonoita valley a few miles north of the plant. The ore bodies in the mines are large and of good average grade. An important discovery made recently in the Hardscrabble, promises much in the way of a higher grade than any heretofore taken out. If permanent—and indications are in that direction—it will prove a bonanza to the company. An increase in the output, which is now between five and eight tons of silver-lead bullion per day, would put the company on velvet.

The buildings are large, roomy and substantially constructed. The size of the smelter building proper is 75x40 feet; the office and living rooms 20x80 with a 40 foot L attachment; assay office is 50x18 feet and is built of adobe as is also the new store, which is 40x40 feet. The boarding house is 70x18 feet; the blacksmith shop 20x40 and a building used for storage purposes 20x36 feet.

The personnel of the management cannot be improved on. The superintendent is Mr. Richard Hames, Jr., a pleasant spoken and courteous gentleman, but business from the ground up. By profession he is a mining engineer—an expert on the valuation of mines—with a vast amount of experience gained in the mines of North and South America, India and elsewhere. The belief of those who have come in contact with him is that he is the right man for the place. The successful operation of the Columbia smelter means much to that section of the country and the prevailing opinion is that under his direction the good work will go continuous ahead. Mr. L. S. Austin of Denver, a metallurgist of considerable note is in charge of the smelter. He is the author of several valuable papers notabone on "Modern silver-lead plant."—*Citizen*.

## COLORADO.

(Extracts from Mining Investor.)

## BOULDER COUNTY.

The letting of the contract on the new railroad to Ward this past week has aroused considerable interest, and everyone is looking forward to increased activity in the camps of the county as a consequence. Work on the road will be begun this week, and it will be pushed to a speedy completion. As it is not expected that the line will be ready for business before the end of the year, immediate benefits cannot be expected in the way of increased shipments. But the outlook is very encouraging, and investment are being made and preparations being completed in anticipation of completion.

The Cashier is still being operated by Bowen and Lipple, with good results. The shaft is down over 100 feet, and it is proposed to drift at that depth in the near future. Some difficulty is now being encountered with water. The necessary surveys have been completed for the Woody mill, and will be begun at once, it is said. Arrangements have been completed for resuming work on the Argo, under the direction of a Mr. Craigie, and work will shortly begin.

There is at present considerable prospecting being carried on in the vicinity of Magnolia, and there are evidences of renewed activity in that camp. The Delamo company is crosscutting in the Lady Franklin and Telephone, but is at present working only half its former force. The Golden group is being worked from a tunnel, with unvarying results by a force of three men.

The Little Pittsburg company, represented by E. C. Atwood is developing the Ben. C. Lowell and Little Pittsburg mines and making good showings in both. The company is working the properties under bond and lease.

## GILPIN COUNTY.

## Pine Creek.

Work was begun last week on a 100-foot contract on the Louisiana, situated on the south slope of Colorado hill and adjoining the famous Mascot mine on the west. This claim, which is one of the most promising in Pine creek, was recently sold to a company composed principally of Toledo men and this is the beginning of a large amount of development work which they will do on their property. After the shaft is sunk to the extent of the present contract a definite plan of development will be determined upon and work pushed as rapidly as possible.

J. L. Miller of Black Hawk, went up to the Plateau mine to make arrangements for the hauling of Plateau ore. Superintendent J. E. Adams says that he has things in shape to make regular shipments and is ready to put the Plateau on the list of Gilpin county producers. The owners of this property have done more work than any other company in Pine creek and have justly earned the reward that is theirs.

Stoping has begun in the Nancy Lee in the east 150-foot level. This body of ore was encountered less than a week ago and all ore between this and the 100-foot levels will be stoped and shipped without delay. The pay streak is 20 inches in width and the ore is worth \$35 per ton.

## IDAHO.

Two prospectors have come into Boise City from the middle fork of Salmon river a section that has never been explored, bringing a quantity of gold taken out there in a few weeks' work. The amount of their clean up was close to \$1,000. An interesting feature of the matter is that this gold is washed from the decomposed surface of a mountain which they declare to be all ore. The mountain is porphyry. The gold is found all through it. They do not claim the rock is high grade, but they assert that it is all good pay. They have been at work there several seasons, making small clean ups each year. They have taken up lode claims and are working the surface as placers. The mountain they call Thunder mountain. The stream on which they are located is called by them Mule creek. It empties into Monumental creek, and the latter into Big creek, which flows into the middle fork of the Salmon. If the mountain is anywhere nearly as rich as they report the discovery is one of the most important ever recorded in the west.

It is now a solid fact that the Jerome Creek camp has a mine that will eventually bring that camp into prominence. Last week the Bishop made a strike, that is considered by far to be the best looking rock yet discovered in the camp. The ore runs very high in copper and silver, with a showing of free gold that, it is estimated, will go from \$60 to \$120 per ton. The find was made in the shaft at a depth of 58 feet and is growing better as the work progresses. The lode is between three or four feet wide, with strong indications of its widening fast. The Bishop is the north extension to the Gold Bug and the two companies propose drifting both north and south from the 100-foot level and taking the ore from both mines out of the Bishop shaft, which is only 60 feet from the dividing line.

A visit to the Poorman mine at Burke last week showed great activity displayed under the new regime both underground and on the surface. Besides the development work being done by sinking the shaft and driving the main tunnel, the ore body is being blocked out ready for stoping, new track is being laid, a good drain dug, etc., and soon the mine will be in first class shape, thereby greatly reducing the cost of working. On surface a large house is being constructed for the use of employes, also a building at the mouth, which will be used as a blacksmith shop and place for storing and framing timbers.

W. B. Webb has a sample of ore from the Jupiter claim, showing the familiar chloride stain, specks of iron, and general texture of the pay ores of the camp. Mr. Webb says that the ledge is, by actual measurement, 23 feet wide, and shows a uniform grade of ore the full width. The claim is located near the junction of Meadow and Grouse creeks, within two and a half miles of Florence. Considering that every piece of ore tested has shown gold and the exceptionally great width the lead, this is one of the most important finds made in the camp.

In crosscutting the Banner ledge last week 14 inches of solid ore was encountered, then about 18 inches of decomposed ledge matter carrying gold in paying quantity then another strata of ore about 12 inches wide, all of which pans exceedingly well. This ore, in excess to that in sight before cross-cutting began, justifies the opinion that it will be but a short time till the company will have an extensive mill plant to handle the output of this mine.



An idea of the size of the ore body can be formed by the statement of Manager Glidden that from pan tests made he believes that the ore will average at least \$10 per ton the whole width of 24 feet. Besides the work now being done, the hoist will be put up and work in the shaft resumed.

It was learned last week upon authentic information, that Larson & Greenough have bought the Morning and You Like mines near Mullan in the Coeur d'Alenes. The deal has been kept secret, and the price is unknown. The Morning mine has been worked under lease by Larson & Greenough for the past two years. It was owned by a Milwaukee syndicate, which bought it from the receiver of the old Spokane National bank. The Milwaukee people put in extensive improvements and tried to operate the property, but were unsuccessful. For a long time the mine lay idle, and then it passed under lease to Larson & Greenough. The lessees have been saying nothing and sawing wood. Occasionally Peter Larson would drop down to Spokane, and mining men would ask him how he was coming on. "Oh, yooost pretty well," Mr. Larson would reply, in a non-committal tone, which might mean anything. In their quiet sort of way they have been working a big force of men, at times numbering close to 200. Recently Mr. Larson slipped away to Milwaukee and while there bought the mine. "It is a valuable mine," said a well informed mining man. "I have a suspicion that right now it is paying bigger profits than the Le Roi. I have no doubt that in time it will pay Warren Hussey's debts ten times over." Mr. Hussey owned the mine at the time he was running the Spokane National bank, and when the bank failed the mine was made over to secure the debts of the bank. Its sale to the Milwaukee syndicate enabled the bank trust nearly to pay its depositors in full.

#### The Custer District.

The Lucky Boy Gold Mining company is making very important changes in their Gen. Custer mill. The mill began dropping its 20 stamps in February, 1881. It was during the next 11 months that the mill made its great record of sending out \$1,000,000 in value of bullion, or an average of an even \$100,000 per month. Soon after this the values dropped considerably in the Custer ores, and the production did not yield such big dividends, but the stamps kept on for many years, until the aggregate product is established at fully \$5,000,000, of which about \$3,000,000 went into dividends. During this time ten more stamps were added to the plant, and were it not that the mill laid idle for several years, it would have been in pretty fair condition when Lucky Boy company got hold of it two or three years ago. The old plant was dry crushing and amalgamation. The old batteries having been worn out, they were removed and twenty new stamps put in. These stamps form as good a line of batteries as is anywhere to be found, and possesses some features well to mention. Instead of placing each battery on solid timbers liable to early and uneven decay and leaving each battery of five stamps quite separate from the others, this new line is built up with 2x8 lumber spiked together so as to make one solid foundation from 14 to 20 feet high, according to the steps in the excavation in which it stands. The posts, however, are of solid timber 12x14 inches, and all is firmly bolted together. Changing from dry to wet

crushing is a very important feature. Plates over which the pulp runs take out most of the gold, while the pulp goes on to settling tanks so extensive and complete as to permit the excess of water to run off and carry the useless slums. The pulp then goes to the eight pans and four settlers to complete the extraction of metals. More pans are to be put in and the number of stamps will be increased. It is from the Lucky Boy mine that ore is at present being taken. This mine has reached a depth of 410 feet, and 35 to 50 miners are employed taking out ore to be hauled three-fourths of a mile and dumped into a bin, from which it is drawn into the buckets of the 3,500 feet Hallidie tram, having a vertical descent of 1,500 feet, to reach the top of the mill.

#### MEXICO.

##### El Oro Mining District.

#### DISTRICT OF INTLHUACA STATE OF MEXICO

The *Mexican Trader* in a recent issue has an article written by J. Fletcher Toomer, A. M. J. C. E. of which we take the following interesting items.

This great district has as its "Veta Madre" the San Rafael vein, a vein that runs between N. 10 and N. 20, East and has a pitch of between 25 and 30 degrees to the W.

The vein where it has been worked, has been found to have a width of from 60 to 120 ft. and its cap can be more or less traced across the country for 14 kilometers.

With the exception of the El Oro mine which is giving very large profits there have in past times been few mines of any consequences located on this vein. First, on account of its being a low grade proposition and secondly, on account of the expensive methods formerly employed to reduce the ore. Although taken as a mass, the vein may be called low grade, still at all points streaks of rich metal are found, running from 3 ft. to 6 ft. in width, and in some places up to 30 or 40 feet.

The best method of treating the ores up to the present time has been found to be crushing them in the ordinary stamp batteries and then amalgamating them in the pans, and afterwards beneficiating the tailings by the Cyanide process.

Tests have been made with a view of treating the ore as it comes from the stamp batteries directly with the Cyanide process, and thus doing away with the expensive pan system, costly not only in motive power and in wear and tear, but also on account of quicksilver, blue stone, salt etc., employed in the amalgamation process.

The tests made up to date, of treating the ores of this district directly by the Cyanide process, have proved successful, and there is every reason to believe that at a very early date a plant will be erected for treating by the direct system. The mines that have been worked in any way systematically, have in their prospect work laid bare immense reserves of pay ore. We might perhaps particularly point to the "Esperanza" mine, which although it is only about two years since the first sod was cut on the surface, has now a shaft down 600 ft. levels run at the proper distances connected as usual by whinzes, and having a length of 150 ft., has not yet traversed the whole breadth of the vein. The products of this mine are already far above the total working expenses, and it is paying dividends, although at the same time the capacity of the mill is being doubled.

It may be said that the "San Rafael" vein and the "Descubridora" are the only two that have been properly explored, and there yet remain many small veins and the large Chihuahua vein, practically untouched.

The "El Oro" mine and the "Esperanza" have been spoken about. Besides these the "El Carmen" mine to the South of the "El Oro" is now producing, rich mineral having been taken from the bottom stopes 300 ft. below the surface. The "San Rafael" vein here, has also shown itself to be solid and good.

To the North of "La Cometa" is situated "El Buen Despacho". This property also has a tunnel in which active work is being carried on. It starts from the deep barranca, and should, in a few months, cut the vein 300 ft. below the surface.

On the mine called "Nolan No. 1" a shaft is now being sunk. "La Reforma" also has work going on in a shaft now nearly 100 feet down. To the south on the "Lloron," a tunnel is being driven now 75 meters in length, from the foot of the Lloron mountain, with the object of cutting the "San Rafael" vein at a considerable depth. Still further to the south on the property of Sr. Rivera, several shafts have been all showing (at a small depth) good signs of the precious metal sought for.

Without doubt, work will shortly be commenced on the valuable claims of "Mexico," "La Cometa" and "El Sirio." As far as can be learned, these mines were worked early in the present century by a Spanish company called the Cia. Unida.

In 1847, an English Co. called "La Cia. Restauradora," bought the property and did considerable work in it, sinking some 10 shafts on the various veins the principal of which are, "San Rafael," "Descubridora," "San Acasio," "Los Marmoles," "La Vetilla," "La Orilla," "Poder de Dios," "Colorada," "San Miguel" and "Chihuahua."

The Principal shaft in which was the 25 cylinder Cornish pump, and the hoisting engine, is called the "La Divina Providencia" and was sunk, so says tradition, to a depth of 800 English feet. The water has been held for 5 years past at the 621 foot level.

The Hacienda covers 42,294 sq. yards, and is still standing in good condition.

#### MONTANA

(Extracts from Western Mining World)

The King Solomon mine, Lump Gulch district, has another load of rich ore in readiness to ship which is estimated to be of the value of about \$5,000.

The fall in the price of silver is a serious blow to the Clancy district in Jefferson county, most of the mines in that neighborhood having been closed down on account of the decline.

#### At Bannack.

The Excelsior mine is looking fine. They struck a large body of oxide tellurium. There is now a good force of men working and they expect to start the mill in a few days. The "A. F. Graeter" dredge, after putting in a new pump, has started running.

One of the richest small finds recently reported was made by Judge Duncan in the Elephant Trail on Norwegian gulch. While the vein is not large the returns are, and two carloads recently shipped netted the fortunate owner \$8,400.



### Richard Notes.

Matt Dunn, of the Falls, came in from Yogo looking for a whim, but was obliged to send to Helena for it. Mr. Dunn has men at work in the sapphire mines and is generally believed to have a good thing, although he doesn't care to say so. Mr. Dunn says that the mines of Yogo are curious anomalies, the vein being a true fissure filled with clay and the sapphires being imbedded in the clay. No mining man who has seen the vein has been able to give an explanation of the singular formation.

Each outgoing train is heavily loaded these days, all the way from 10 to 15 carloads of ore being sent out every trip. The Diamond A adds its quota of about 100 tons on every down train from its second class dump and the Broadwater ships from 15 to 20 cars per week. The rest of the ore goes from the Galt, Florence, Benton, Big Seven and various leasers. Besides the ore quite a number of carloads of props, poles and lagging are being sent out regularly. When the Queen commences to ship heavily, which is expected to commence doing very shortly, it would seem as though a daily train would be necessary, for the road has about all one engine can handle right now. No such trains have been sent out since the crash.

### Around Phillipsburg.

The lessees on the Red Lion property are overhauling the mill preparatory to starting crushing ore. The mill consists of 10 stamps. The boiler and engine were tested and found to be sound and intact.

It is reported that Butte parties are considering the advisability of purchasing the Gray property, which lies between the Red Lion and the Flick properties. Should the deal be consummated, it is the intention of the purchasers to experiment with the cyanide process on the ores of the property.

Snyder & McLees have completed arrangements for the erection of a mill on their property, which is on the mountain back of Ramsey and about a mile from the famous Fair-stake property. The mill will consist of three stamps and of the free milling process.

In the Flick property, situated about two miles from the Red Lion a rich strike is reported, but as to its exact value per ton or extent of the find we are unable to state.

A strike of rich gold ore was lately made in the Dunkleburg district by Mr. Gates and partners on a claim lying directly north of the Irene. Details are very meagre, but from what can be learned it appears permanent. A shipment of the product was recently made and the returns were very satisfactory. There is said to be considerable of this same kind of ore throughout that district, which has heretofore been considered worthless, as no one took sufficient interest in it to have it tested for gold. Harry Roland and partners, in the same district, have lately found a 20 inch streak of good quality of gold ore in the foot wall of the lead on which they have been working for several years past. It was found in an unexpected way by the owners while cutting out for a track level.

A. M. Esler and Frank W. Esler are putting in shape on the Overland mine a steam hoisting and pumping plant, which will be completed in a few days, when the present shaft, which is now down 300 feet, will be put down at least 200 feet further. At the bottom of the present shaft a level has been run on the ore 350 feet west and for over pre-half

of the distance there is iron pyrites ore, carrying gold. The pay ore is encased in a belt of jasper and agate which is about 200 feet thick, with a granite hanging wall and dolomite lime foot wall. The Overland pay vein varies in thickness from a few inches to 30 feet and has yielded ore which has netted more than \$1,700 to the car. The mine is 10 miles east of Helena and about three quarters of a mile east of the Bonanza Chief.

W. J. Clark of Neihart fame and W. D. Wheeler of Helena have bonded the White Cloud property near Missoula. The bond is \$25,000, first payment to be made December 1. Work will begin at once. A new process of treatment of the ore will necessitate many improvements of the mill. Mr. Clark feels satisfied with the tests made that the White Cloud can be worked successfully.

The Alaska-Montana Mining company, capitalized at half a million, has been organized in Helena, with the following incorporators: R. C. Wallace, Peter Larson, A. J. Seligman and A. I. Reeves. A. J. Seligman is named as president, R. C. Wallace vice president, E. D. Weed secretary and the American National bank treasurer, Ex-City Marshal Davis and ex-Police Magistrate Gage have gone to Klondyke to represent the company.

The concentrator and leaching plant of Messrs. Townsend and Butler at Argenta, Beaverhead county, is now in full operation. Six stamps are crushing the ore, which is concentrated on two Frue vanners. The tailings are elevated by power to the leaching vats, five in number, and a power pump conveys the solution to the different floors of the mill. The success of the enterprise, which means so much for Argenta and Polaries, is now an assured fact.

### NEVADA.

George Simmons, of Vanderbilt, Cal., has bonded a one-half interest in the Turquoise mines recently discovered by him in Lincoln county, Nevada, to Dave Moffitt, the banker, of Denver, Colo., for a very satisfactory consideration.

Last month, Geo. Simmons went to Denver with a small pickle jar of the gems, and was paid \$6000 for the same. Mr. Moffitt heard of the discovery and the value of the turquoise, and wrote Mr. Simmons, that if he needed any money, to call on him. Mr. Simmons, accordingly, made the call, and Mr. Moffitt's son-in-law was sent to Vanderbilt and made an examination of the property—reported favorably and the bond was made out. There are four or five men now employed upon the property, and more will be employed immediately. The largest turquoise cut in the United States has been just taken out of this property—it being sixty-four carats. The next in size, now in possession of Mr. Simmons, is just thirty-two carats, or one half.

A. G. Campbell is working about forty men on his copper property, near Crescent, Nevada.

The Hassell Iron Works Co., of Colorado Springs, Colo., are now building an automatic horse whim, which is becoming very popular, especially for mines requiring horse power machinery. The whim is automatic, very light and strong, and can be packed anywhere in the mountains.

### NEW MEXICO.

(Extracts from the Silver City *Enterprise*.)

#### HANOVER.

N. S. Berray has 30 men employed upon the old Hanover mine. He is taking out over 100 tons of copper ore per week, which is hauled to the smelter at Copper Flat. The Copper Flat smelting plant is running full time and more bullion than ever is being produced.

#### HACHITA.

Weems, Anderson and Gleason are taking out good pay ore on the Copper King. Shipments are suspended at present on account of bad roads, caused by the recent heavy rains. Ore is accumulating on the dump at the mine and a big shipment will be made as soon as the roads will permit. The ore runs high in copper and carries considerable value in silver.

#### MOGOLLON.

The Confidence mine has 40 miners employed, and is producing sufficient ore to keep the mill steadily at work. A new cam shaft to replace the broken one was received, and the mill is now working to its full capacity. The ore in the mine is of better grade than ordinary. Three large Felton water wheels are at the depot in Silver City awaiting transportation to Graham. The steel for the big pipe line to furnish water power for the mine and mill has not yet arrived. In the meantime everything is being put in readiness to facilitate the rapid completion of the water power system as soon as the pipe arrives.

#### PINOS ALTOS.

The hoiler from the Pacific mill near Silver City has been placed in position on Pacific shaft No. 3, to run the large hoist which has just been put in place on the mine. A steam hoist will soon be started on the Mina Grande mine. These properties belonging to the Hearst group are showing up excellent results with development.

Twelve men are employed upon the Mountain Key mine taking out rich gold ore from the upper levels.

A. Hersberger is taking out good ore from the Eastern and Western mines, which is being milled at the Stantley, Martin mill.

#### CARLISLE.

The experimental mill erected by the London Exploration Company is kept running one shift on ore from the Jim Crow mine.

The announcement which was made last week of the sale of the Texas mine in the Central District has been verified by the recording of a deed for 10-12th of the property, in the name of H. Niles as trustee.

It is understood that the consideration was \$10,000.

The Texas is the most highly developed silver mine in the district and has shown paying ore from the start; but it has suffered under the disadvantage of conflicting interests and confused titles, all of which tended to retard the proper development and to prevent the systematic management necessary to realize upon its values.

Interests in the property were held by Captain A. C. Markly and Lieutenant George S. Cartwright together, owning 2-12ths; Albert Corn, who owned 4-12ths; F. J. Wissell and Charles Woodcock, whose holdings were 1-24th each; and Captain W. J. Owen, F. J. Wissell and J. Crockett Oivens, who together owned the remaining 5-12ths.



## OREGON.

(Extracts from Oregon Mining Journal)

B. F. Watking has located a ledge of quartz eight inches wide and which shows free gold. It is on a spur of Green mountain, 2,400 feet elevation, in Douglas county. There are plenty of good placer streams in the vicinity of Green Mountain.

The coal mines in Curry county in which Joseph Younker owns an interest are likely to be developed. A Mr. Burns representing a Portland company is there and they have purchased an interest.

Wm. Bailey has discovered a good vein of ore on Palmer Creek, near Grant's Pass. He does not know how wide it is but there is lots of \$14 ore there.

F. O. Hurd, the gentleman who is the owner of the Boggs mine on Elliott creek, near Grant's Pass, is out at the mine with a crew of workmen employed in preparing the ditch and turning the water into the flumes. Nothing has been done at the mine for several months and everything is pretty well dried out. Mr. Hurd, we understand, expects to operate the mine quite extensively next winter.

Frank Morris claims to have located a ledge in the Elliott creek country that assays better than anything yet brought out. He has two ledges, one three and one-half feet wide and the other one foot. The quartz is different from any other ledge opened up and has an assayed value of \$32 per ton.

Work proceeds steadily at the copper mines near Grant's Pass. Some twelve men are employed.

Mining by wing-damming is much in fashion this season on Rogue river. A correspondent informs us that there are five such dams on the river between Woodville and Grant's Pass.

The last steps in the purchase of the Horn Silsby hydraulic mines on the Illinois were taken last week. The deeds were accepted and the money paid. The new owners have been in possession for some time and are rapidly equipping the mine with necessary ditches. Some twelve men are employed.

J. H. Weston of the Summit tunnel claim, spent a few days in Grant's Pass. It is learned from Mr. Weston that five men are kept steadily at work on the tunnel. The ledge which was struck at a point 445 feet from the face of the tunnel has just been cross cut and proved to be thirty feet wide. Mr. W. does not believe, however, that he has the main ledge and he is proceeding to extend the tunnel.

Huntington quartz mill on the Golden Fleece mine near Talent, which was destroyed by fire last week, was the property of Dr. W. H. Flanagan, of Grant's Pass—one that he had in contemplation bringing to this place for a custom mill. It has not been used for some time and there has been no fire in the premises for months. There were explosive chemicals in the building that are used for amalgamation purposes. The origin of the fire is unknown. It was either set on fire or caused by the explosion of chemicals.

The long-pending deal on the Oro Fino quartz mine on Jump-off Joe was closed last week. The Oro Fino and two adjoining claims passed into the hands, under a deed of conveyance, of James Monaghan of Spokane

The consideration is reported to have been \$5000 cash. Messrs. Boynton & Turner have made a stake—a small one, it is true, but well deserved; and Messrs. Monaghan & Crane get a very promising mine on fair terms. A force of twelve men have been put to work; a 350 foot drift will be run and the shaft sunk twenty feet further. When this work shall have been finished, it will be in order to increase the milling facilities of the mines.

In Josephine county alone there have been 1500 mining location notices filed since the first one in the '60's.

The placer property owned by Messrs. Williams and Fassbender has been sold to the Flick Bar Placer Gold Mining Company. This is one of the French companies, and as it has plenty of money the property from now on will be worked on a much larger scale.

The section known as Rye Valley, located about thirty miles from Baker City, is very prosperous this season. The usual number of placer mines are being operated, and there is greater activity among the quartz ledges than ever before. Everybody in the district is enjoying a season of prosperity.

The Roseburg Mining Company filed articles of incorporation with the county clerk of Douglass county, the middle of last week; capital \$200,000, divided into shares of \$1.00 each; incorporators, R. S. Sheridan, H. W. Miller, E. McBroom. The principal office of the company will be at Roseburg, Ore., and the object of the corporation is to do a general mining and milling business. We understand that the first work of the company will be to develop a quartz lead in the Bushy Butte district.

## WASHINGTON.

(Extracts from Tacoma Mining Review)

## Quartz Mountain Notes.

There are about fifty men on Quartz Mountain at the present time, and more are daily going in.

Judges Carroll and Williamson, Sheriff Mills, Messrs. W. A. Gerry and Chezum have just returned from a week's inspection of their property, and are well pleased with the showings already made. These gentlemen own twenty-five claims on Quartz Mountain, and intend developing their properties as soon as possible. Work is now progressing on "77." Burbin and Kahoots. The "77" claim has an excellent tunnel site, and a force of men is now engaged in driving the tunnel. It is a low grade proposition, but the whole mountain seems to be quartz. The ore is free milling and assays from \$3 to \$6 per ton. At present a private corporation, they do not intend incorporating, and the money for development work will be procured by means of an assessment of the parties interested. Judge Carroll stated that a force of men would be kept working, and at the proper time the owners would erect a mill.

## From Gold Hill.

Mr. Edward Keith has begun development work on his properties.

Messrs. Farrell and Forest are developing their claims on Gold Hill.

Messrs. Darr and Dibble, of the survey crew, have located a claim on Goat creek.

The parties owning the Black Hawk on Crystal mountain are busily engaged in driving their tunnel.

Mr. J. B. Current is pushing the work on the Comet. This property is situated on Crystal mountain and has a shaft down thirty-five feet.

George Brown and a force of men are pushing the work on the Elizabeth creek properties.

## Silverton.

It is reported that the "Vandalia" is about to be sold to Eastern parties.

The "New Seattle" has a drift forty feet, all in ore, at a depth of seventy-five feet in the winze.

The "Grizzley" is still working, and has a pretty good showing of ore assaying \$28 in gold alone.

The "Forty-five" company is still packing ore to Silverton and will soon have three car loads ready to ship.

The "Warshaw" Mining Company has uncovered a fine body of ore in driving the tunnel on their Martin creek property.

The force of men which Superintendent Kennedy set to work on the Helena a short time ago, after driving a few feet uncovered a fine shoot of arsenical iron, carrying \$50 in gold.

The parties working on the "St. Louis" have run the drift 100 feet west from the crosscut, cutting one ore shoot, which is twenty-two inches in the face.

## Monte Cristo Items.

The Golden Cord tunnel in the Thomas mine on the north side of Mt. Williams is steadily progressing.

Jacksonville, Ill., capitalists are investigating the merits of the Del Campo Co's properties, west of Monte Cristo, with a view of becoming substantially interested.

In the crosscut at the Argonaut a streak of high grade ore four to eight inches wide was struck on the hanging wall. This streak carries gold, silver and copper, the principal value being gold.

Knight & Stone, of Spokane, have resumed operations on their contract for 1000 feet of diamond drill work on the company's property in the Seventy-six gulch. The drill makes from ten to thirty feet per day.

A reliable report comes from Monte Cristo that eight feet of ore, carrying two ounces of gold and some silver, has been struck in the lower tunnel of the Rockefeller syndicate's Pride-Mystery mine. The raise from this tunnel to the Pride workings is being done with air drills and will be completed in August, when the working force is to be doubled. From 100 to 120 men are now employed, the weekly output being upwards of 1200 tons, equal to that of eleven shipping mines of the much advertised Trail creek district.

## St. Helen's District.

The Eleven Consolidated Gold Mines Co. is pushing the development work on their properties.

The Golden Eagle, one of the Far West group of claims belonging to the Olson Bros., shows a vein of four feet of heavily mineral-



ized quartz and gauge. Some Denver parties are negotiating for the claims and the deal may be completed in the near future. The property consists of twelve claims on Empire mountain, about one mile southeast of the Samson group.

George McClure has gone in with some men to work his claim, the Junbo, on one of the tributaries to Lewis river, on which he has a true fissure of about six to eight feet in width of quartz, carrying iron pyrites and black sulphides. Assays show about \$10 to \$12 in gold and some silver. The croppings of the vein are of free gold, but running into base as depth is gained.

Work is progressing on the Chicago claim, tons of fine ore being taken out. Some of the finest specimens of copper ore, i. e., native copper, black and red oxides and chalcopyrites, are found in great abundance and varieties of colors. The property has been bonded by some Portland people who are wide awake to the inducement offered by this claim. They intend to push work ahead on a tunnel that runs on the vein, which has a pay streak of about six feet.

Lovejoy, Chiodo and Holden, of the Bonanza Mining Co., who all hail from Seattle, are up at their claims in Silver creek district, and are working a good force of men. The necessary work for obtaining government patents to the three claims now being opened by their company, is being pushed.

## GENERAL NEWS.

Another Process for the Treatment of Low Grade Refractory Gold and Silver Ores.

The future of gold mining in the United States depends upon the economical working of low grade ores, and it would seem that the attention of capital is directed more towards large deposits of low grade ores than to the high grades. It is a fact, generally well understood among mining men, that the quantity of low grade refractory ores of this country greatly exceeds the high grade or free milling ores, and the great problem has been for years, and is today, how to work at a net profit the vast amount of wealth in these ores.

There has not been for years a greater interest in gold mining than at the present time, and there is therefore a greater necessity than ever before for many processes that will efficiently and economically treat the refractory ores met with.

Among the several processes that are now being offered to the mining public is one known as the COCHRAN RELEASER, controlled by the American Mineral Releasing Company, Boston, Mass., a description of which we give our readers herewith.

As the name implies, this releaser simply "releases" the precious metals from the base, rendering the former fit for perfect amalgamation, concentration, chlorination, or any other known process for saving the precious metals.

Pulverized ore, of 50 to 60 mesh, is automatically passed through an intense oxy-hydro-carbon flame, through water-backed iron flues, and into a water-backed combustion chamber, under the control of an air blast, by means of which every molecule of ore is brought into intimate contact with this intense heat and flame, causing the gases in the ore to suddenly expand, breaking up the chemical combinations, subliming and substantially destroying all the objectionable ele-

ments present, and depositing the ore and the condensed sublimated gases under a sheet of water, through which all the products of combustion must be filtered before they reach the receptacle for treatment by amalgamation, concentration, or chlorination.

The fuel used is crude petroleum, which, when properly mixed with air, forms a perfect combustion.

The air and the oil are forced through small burners or atomizers, each flue having four in front of it, and in the center of each of these is placed the pipe which conveys the ore, under the control of an air blast, into the flues, through the oxy-hydro-carbon flame. Thus both the quantity of the ore introduced into the Releaser at any one time, and the measure of heat needed for any particular quality of ore, are under the perfect control of the operator.

When rightly treated, the ore comes from the releaser into the receiver perfectly free from any elements that could injuriously affect amalgamation, concentration or chlorination.

It is claimed that this releaser will treat the various ores of cinnabar as easily and successfully as the ores of gold and silver.

As soon as the ore is in contact with the intense heat of the oxy-hydro-carbon flame the quicksilver in the ore is immediately sublimed, and on reaching the condensing chamber and meeting with the cold water and spray is instantaneously reduced to a metallic state, thus putting the ore into a condition to be washed in the usual way, and the metallic quicksilver obtained as if washing free milling gold and silver ores.

The quantity of oil used varies from 12 to 15 gallons to each ton of ore treated, the quantity depending upon the refractory nature of the ore. Petroleum of the nature used being cheap, the cost of desulphurizing and oxidizing, or in other words "releasing" the precious metals from the base, would not cost over seventy-five cents to one dollar per ton. The company claim that the total cost of crushing and pulverizing the ore, releasing the gold and silver and amalgamating the same, can be accomplished for \$3, or less, per ton.

The capacity of a machine varies from one ton per hour upwards, depending upon the number of flues used and size of combustion chamber.

This process has been tried upon all classes of refractory ores in a limited way, and is now brought to the attention of the mining public as one of the most efficient and economical methods of treating refractory ores on the market.

In order to give an opportunity to test the merits of this process, a working plant is being erected in Boston for the purpose of testing ores in any quantity, from a few pounds to car lots. We suggest to the public the desirability of investigating the merit of this system.

It is promised that this process will be introduced in California this winter or the early part of next year.

### Anti-Caloric Steam Pipe and Boiler Covering.

The California Anti-Caloric Company is manufacturing in San Francisco, entirely from California products, under patents owned by them, anti-caloric boiler plaster and steam pipe covering, which material, either in sections, blocks or plaster form, is the best insulating compound in the market. It is composed of two natural elements, an infusorial earth, which carries by analysis 86 per cent

pure silica, and the fibre of typha latifolia, 5 per cent asbestos is added in blocks and sections for strengthening purposes in handling and transportation. No plaster of paris or lime is used in its manufacture, hence it is practically free from all heat-conducting ingredients, and it is absolutely fire proof.

A saving of 20 per cent in fuel can be safely counted on when boilers and steam pipes are covered with this plaster, which we recommend being used in preference to boiler blocks, when practicable, and on all steam pipes over three inches in diameter.

One advantage of this plaster is that it can be removed at any time and re-applied without loss of efficiency.

This covering has been in constant use for the past year by many of our largest corporations, and in every instance where it has been applied, entire satisfaction has been given.

For house purposes this plaster is invaluable. Elevator shafts and light wells, always a source of danger in case of fire, are rendered entirely fire proof, by applying one coat of this material, of the ordinary thickness of house plaster, to the walls, and freedom from accident caused by overheated flues and chimneys is guaranteed. In rooms plastered with it an even temperature will always be maintained, as it is an insulator as well as fire proof, hence sudden changes from extreme heat and cold will not be felt, adding greatly to the health and comfort of the occupants.

As a floor-deadener, it is superior to anything in present use. Rats, mice and other vermin cannot live in it. It weighs only one pound to the square foot, one inch thick, and is the cheapest thing of the kind in the market.

Patronize home industries. Send for price lists and samples.

The Colorado Iron Works of Denver, Colorado, report the following sales for last week: One carload mining machinery to Alamo Mining Co., Fort Garland, Colo.; carload hoisting machinery to Ameca, Mexico; large steel caisson to Pennsylvania Smelting Co., of Sandy, Utah; carload water jackets to El Paso Smelting Works, El Paso, Texas; carload stamp milling machinery to Oaxaca, Mexico. They also closed a contract, Aug. 16, for a ten stamp mill, erected to go in near Baker City, Oregon; shipments of six special ore cars, from special patterns, to the United Globe mines, Globe, Arizona; one round bowl slag truck, capacity 35.16 cubic feet, to Pueblo Smelting and Refining Co., of Pueblo, Colo., were made week before last.

### Wilfley Concentrators.

The sale of Wilfley concentrators for the last few months has been unprecedented. The Mine and Smelter Supply Company, of Denver, report orders from all parts of the world. For the four weeks ending July 15th, over sixty concentrators were shipped, as follows:

Four to the Carolinas Mining Co., of Ouray; 8 to Standard Mine, at Idaho Springs; 3 to Fall River Mining and Manufacturing Co., Idaho Springs; 2 to the Mary Murphy mine at St. Elmo; 1 to Iowa mine at Silverton; 3 to Standard mine, Wallace, Idaho; 2 to Mammoth mine, Gem, Idaho; 2 to Granite mine; 2 to the American Zinc and Lead Co., at Phoenix, Arizona; 1 to Borman & Boggs, Hailey mines, Idaho; 2 to Consolidated Tiger & Poorman's mine, Burke, Idaho; 2 to Council mine, Summitville, Colorado; 3 to Brodie Mill, Cripple Creek; 20 to the Colorado and Philadelphia Reduction Co., Colorado City



Colo. These 20 are put in to concentrate cyanide tailings, and have proved successful. 1 to J. H. Gaily, Auburn, Calif.; 1 to Key-stone mine, Leonia, Idaho; 1 Maggie Mining Co., Elmore, Idaho; 3 McClure & Co., Albermarle County, North Carolina; 2 B. S. Phillip, Breckenridge, Colo.; 1 A. K. Phelo, Idaho Springs; 1 Ridge mine, Creede, Colo.; 1 Raymond mine, Ohio City, Colo.; 1 J. Renstron, Eagle, Colo.; 1 Magdalena, Mexico; 1 Tenero Mining and Milling Co., Honduras.

These tables have replaced all kinds of other makes, and are pronounced a great success wherever used.

The Goulds Manufacturing Co., of Seneca Falls, N. Y., has just published their new catalogue of Efficient Power Pumps, for every service. It contains 80 pages and cover, handsomely printed, on the finest glazed paper. There are about sixty fine wood engravings of power pumps, which is quite an object lesson. The book also contains several pages of useful information, such as: How to find the capacity of any single-acting

cylinder: To find the pressure in pounds per square inch of a column of water: To find the horse power necessary to elevate water to a given height: Weights and capacity of different standard gallons of water. It gives a table of areas of circles, and a table showing capacity of pumps of given diameter and length of stroke. Another very important table is given of the friction loss in pounds pressure per square inch for each 100 feet of length in different size clean iron pipe, discharging given quantities of water per minute, by G. A. Ellis, C. E.

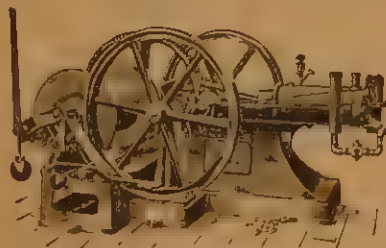
A valuable table is shown for converting feet head of water in pressure per square inch. Also a table for converting pressure per square inch into feet head of water. On the whole, it is a well gotten up book.

We are in receipt of the Detroit Lubricator Company's catalogue of sight feed lubricators, plain lubricators, brass and glass oilers, oiling devices, kerosene oil injectors, low water indicators, globe valves, steam and hot water radiator valves, etc. It is a well

printed pamphlet of forty-four pages and cover, containing about eighty illustrations of lubricators, valves, etc. Among the most prominent illustrations are Improved Standard Lubricators; Old-style Standard Lubricator; Style "A" Lubricator; Zero Lubricator; style "C" Lubricators; Single and Double Connection; style "D" and "E" Lubricators ( $\frac{1}{8}$  pint); Kid Lubricators ( $\frac{1}{8}$  pint). Double Sight-feed and Triple Sight-feed Lubricators; Gas Engine Air Compressor and Ammonia Cylinder Lubricators; Glass Body Sight-feed Lubricators for Gas Engines and Air Compressors; Regular Locomotive and Elbow-shank Brass Oilcups; Skeleton and Crank-pin Oilers; Pendry Balanced Throttle Valve, Guide and Cross-head Oiling Device; Main Journal Crank Pin and Eccentric Oiling Device; Quick-opening Steam Radiator Valves; Union Elbows, Globe Valves; Screw-stem and Quick-opening Screw-stem Steam Radiator Valves; Lock and Shield Radiator Valves; Quick-opening, etc. More than 350,000 Detroit Lubricators are in use on the World's engines.

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CATALOGUES ON APPLICATION



## Registering Gold Mines.

The State Mining Bureau is about to commence the preparation of a register of mines and minerals of California, in a concise tabulated form for convenient references, and with these tables will be published topographical maps of each county, showing all mineral locations, mills, ditches, etc. The maps will be in three colors, and on a scale of two miles to the inch. The maps and mineral tables of the respective counties will be issued separately and as rapidly as completed. The *Examiner* gives the following particulars of this project:

"It is the intention to give the name of the mine, its owner and superintendent and their addresses; exact location, nearest town, details of character of the mine, such as kind of ore, banging and footwall, etc.; also depth of shaft or incline, length of tunnel and such other details as are of general interest, with number of men at work, etc. There will be tables of the quartz mines, the drift and hydraulic mines, mineral springs, mills and arastras, etc. State Mineralogist Cooper intends sending a sample table to all superintendents and mine owners, with a printed slip asking them to fill in the information

desired, and from these slips the large tables will be filled out. None of the information asked for is of a character the mine owner usually likes to keep secret, as nothing is to be said of the value of the ore, output, etc. In fact, the recent reports have never given details of values, this being something the mine owner considers his own business only. But these tables Mr. Cooper is having prepared will give all the information necessary to people who want to learn about any popular mine. In case there are any special features about the mine, there will be notice in a separate paragraph. In general, however, the same space will be allotted to each mine, large or small, and if any mine is omitted, it will be the fault of the owners or superintendents themselves, as they will all be addressed for the desired information. If they do not reply they have 'no kick coming.' The object of the bureau is to advertise the mineral resources of the state. That is what it was established for, and the reason it is maintained. The owners and superintendents, however, are as much interested as any one in this matter, and should not fail to respond to the requests for information concerning their properties. The details in the

tables will show the development of the respective mines, so that people wishing to look them up may judge of their character. If the information is satisfactory, and they wish to make further inquiries, the names and addresses of owners and superintendents are given, so that they may be written to. The plan is a good one, and though it will materially curtail the proportions of the printed reports of the bureau, all the really useful information will be given. It is very little trouble for the superintendents to assist the bureau in completing a full and correct register of the mines and minerals of California, which will be very useful for all interested in the mining industry."

## Mining Industries.

One of the best indications that the future prosperity of this country, with good government, is well assured is found in the mineral production for the year 1896. That period was not one that would be looked to as an average in promise, and yet the exhibit is very favorable. Activity in mining carries with it a large volume of other business, and the figures of last year are a subject for congratulation. The total value of the metal

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WILL EXAMINE AND

## Report on Mines,

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Prescott, Arizona,

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Will show what is in your  
ore.

## A Mill Test

Will show what you can get  
out of it

## We Do Both

Practical working tests made  
of ALL CLASSES OF ORES and  
advice given as to best  
methods of extracting values.  
Mines examined and report-  
ed on. Twenty years experi-  
ence with Pacific Coast ores.

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and mineral production of the year in the United States is placed at \$751,732,782, an increase over 1895 of \$18,791,264. This increase is largely in gold and silver. In gold the aggregate rose to \$58,660,687, or \$11,830,437 more than in the preceding year. It is rather surprising that our output of gold should increase 20 per cent in a single year. Our imports of gold last year exceeded the exports by \$46,000,000.

Our copper yield in 1896 was 467,822,973 pounds, or 81,350,000 pounds more than in 1895. The demand for the metal in the electrical field is rapidly increasing. Coal production fell off 1 per cent in 1896, though the total reached 187,373,477 tons. The production of pig iron last year was 8,623,127 long tons, or 821,861 less than in 1895. This was a most serious decline, yet it must be borne in mind that the American production of pig iron has doubled in fifteen years, and that it is certain to resume its rapid upward march.

The yield of silver deserves separate mention, on account of the exceptional circumstances surrounding the metal in 1896. More silver was mined last year than the year before. In 1896 the silver product was \$76,099,236, and in 1895 it was \$72,051,000. The price has been tending downward, otherwise the production would have been at least 25 per cent. more than it was.

### PERSONAL NEWS ITEMS

W. E. Van Slyke, who is mining fifteen miles south west of the Needles, was among the callers at the JOURNAL office, Aug. 18th.

W. E. Hubbard has returned to Salt Lake, Utah, from a business trip to Leesburg and Salmon City, Ida.

J. R. Young was in Tucson, Ariz., the other day, and went on to Yuma, from whence he will go to the King of Arizona mine.

Albert Leigh, of Yuma, was a caller at the JOURNAL office, August 18th.

W. B. Waters, of Chicago, president of the El Plomo Mining Company, at El Plomo, Sonora, Mex., has gone down to the mines.

The imports of gold from Mexico, during the year ending June 30th, 1897, were \$3,670,000, as against \$3,106,464 last year. Silver imports show a falling off from \$10,785,330 to \$8,632,794. Exports of gold to Mexico this year was \$4,962, last year \$76,168. Silver exports to Mexico, this year was \$109,187, last year it was \$215,301.

J. F. Osenberg, of Prescott, Arizona, is in California, on important mining business.

W. E. Newcomb, who is largely interested in some mines about Silver City, N. M., was in Los Angeles last week.

Col Bannister, who was formerly largely interested in Butte, Montana, mining property, but who is now a resident of California, has been in the city this week.

H. C. Donald of Toulumne county, Calif., has accepted the management of the Mojave property of the Mojave Gold Mining and Milling Company, of Los Angeles, Cal.

Dr. Swallow, who built the first 24 stamp mill in Montana, on the Ballarat and Forest (Queen) lodes, has left Helena, Montana, where he has resided for 17 years, and located in Chicago. He is now 80 years of age, and was once a noted mining expert in Montana.

The bituminous coal imported from Mexico in one year, ending June 30th, 1897, was valued at \$218,456, against \$146,813 the previous year.

The coal exported to Mexico during the same time from the States was valued at \$643,715, as against \$397,469 during the year before.

J. R. McDonald, a capitalist who operated largely in the Puget Sound country in the boom days, has been spending a few days in Butte, Montana, looking at the mineral resources of the big camp.

Exports from the United States, for the latter half of the year 1896 and the first half of 1897, of crude mineral oil to Mexico decreased \$43,489, from the export during the same time the year before. The export of refined mineral oil increased to \$174,107 from \$142,761.

H. Meneger has returned to Tucson, Ariz., from Sonora, Mex., to which state he had been visiting a mine he is interested in.

E. R. Halesworth, of the Dale mining district, was a visitor at the JOURNAL office, August 20th.

E. S. Richards, the genial mining man of Los Angeles has recently returned from a two months trip to the Holcomb Valley, in San Bernardino county, Cal., where he has been prospecting.

Gus Blstrom, of Tasco, State of Guerrero, Mex., recently made a trip to the City of Mexico.

L. W. Morgan, an assayer of Los Angeles, has recently returned to this city from a trip about 50 miles north of Needles, where he went to put some men to work on the Pine group, which he recently acquired and has interested some Los Angeles men in.

Mexican lead, valued at \$1,456,320 came into the United States during the year ending June 30th, 1897, an increase of \$100,000 over the previous year.

C. D. Howry and C. D. Cheeseman, two well known business men of this city, recently made a visit to Randsburg, and purchased of Geo. D. Roberts a group of four claims, named Mable K., Motor, Hazel Dell, and Gem. They are excellent prospects.

E. M. Shafer, a mining man of Chicago, Ill., has gone to El Plomo, Sonora, Mexico, to visit some mines he is interested in.

F. R. Dickinson, of Minneapolis, Minn., is expected at Hermosillo, Sonora, Mexico, shortly to go to Sanqui Grande, where he is heavily interested in some very promising mining property.

Major Duncan, one of the owners of the King of Arizona mines, north of Yuma, was a visitor in Los Angeles last week.

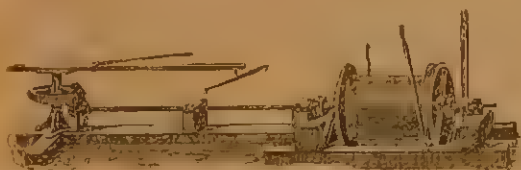
Appleton H. Danforth, representing the Moctezuma Copper Company, has obtained a concession from the state government of Sonora for the establishment of a smelting works in the mining district of Nacosari, in the county of Moctezuma.

Jay E. Hunter, of this city, is visiting his mines in Randsburg, where he and A. L. Stewart own the Gray Eagle and other properties.

Mexico bought from the United States, during the year ending June 30th, 1897, \$11,046 worth of copper, as compared with \$18,670 in 1896.

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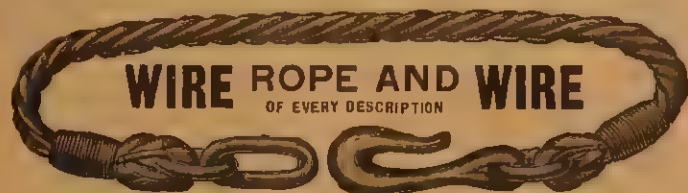
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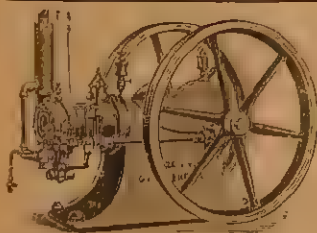
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Trade of the SOUTH-WEST

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## LOS ANGELES MINING AND STOCK EXCHANGE REPORT

Average Bids and Offers, and Total Sales for the two weeks  
ending August 31st, 1897.

STOCKS	AVERAGE		TOTAL SALES
	BID	ASK	
CARIBOO, (British Columbia) Capital, \$300,000 Par, \$1	..	..	..
WEDGE, (Randsburg) Capital, \$500,000 Par, \$1	34	35	6,500
LAGUNA, (San Diego) Capital, \$500,000 Par, \$1	..	..	..
RAND MOUNTAIN, (Randsburg) Capital, \$1,000,000 Par, \$1	.023	.034	128,000
PACIFIC CONSOLIDATED, (Red Rock) Capital, \$1,000,000 Par, \$1	.015	.013	187,000
BROWN-DAKE, (Arizona) Capital, \$1,500,000 Par, \$1	.03	..	200
Gold Bug	.013	.017	152,000
Lucky Star	.015	.014	86,000
EAST AMARGOSA, ..	.012	.013	9,000
UNLISTED ACTIVE			
IRON MOUNTAIN, (Cripple Creek) Capital, \$700,000 Par, \$1	.015	.02	12,000
PORTLAND, (Cripple Creek) Capital, \$1,000,000 Par, \$1	.63	.64	1,000
LITTLE BUTTE, (Randsburg) Capital, \$500,000 Par, \$1	.29	.34	4,000
Yellow Rover	.013	.012	10,000
Sunset Mining & Milling Co	.064	.07	32,100
AMARGOSA, ..	.26	.32	1,100
Mohawk Acton	.015	.015	62,000
VAL VERDE, (Randsburg) Capital, \$2,000,000 Par, \$1	.023	.03	6,400
MAGNETTA, (Randsburg) Capital, \$500,000 Par, \$1	.033	.03	9,000
Ivy Group	.15	.15	3,700



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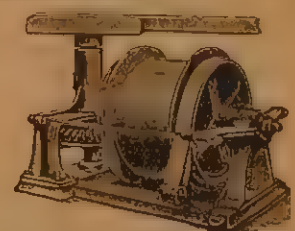
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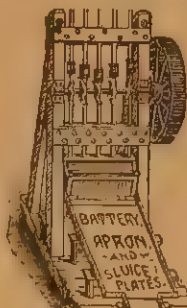
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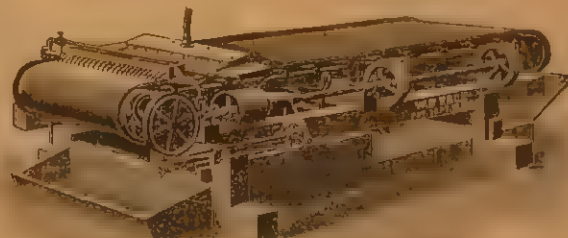
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NAMES OF MINES	LOCATION	No. of Shares	Capital Stock	Par Value	Amount of Last Dividend	Date of Last Dividend	Total Amount Paid in Dividends	Kind of Mineral Produced
Aetna Cons.	California	100,000	\$ 500,000	5	10	June 1897	\$ 100,000	S, L
Adams	Colorado	1,500,000	1,500,000	5	04	October 1896	60,000	S, L
Alaska, Treadwell	Alaska	200,000	5,000,000	25	10	January, 1897	100,000	S, L
Alaska Mexican	Alaska	200,000	1,000,000	5	37 1/2	January, 1897	100,000	S, L
Anaconda	Montana	100,000	30,000,000	25	1 25	Nov. 1896	2,500,000	S, L
Anchorage Leland	Colorado	800,000	800,000	1	01	May 1897	800,000	S, L
Atlantic	Michigan	40,000	1,000,000	25	1 00	Feb. 1897	100,000	S, L
Bald Butte	Montana	250,000	250,000	1	08	June 1896	100,000	S, L
Bangkok O-Bell	Colorado	800,000	800,000	1	1	July 1896	800,000	S, L
Big Six	Colorado	500,000	500,000	1	00 1/2	April 1897	500,000	S, L
Boston & Montana	Montana	150,000	3,750,000	25	3 00	Feb. 1897	1,500,000	S, L
Bullion Beck and Champ	Utah	100,000	1,000,000	10	50	Mar 1897	200,000	S, L
Carlton	British Col.	800,000	800,000	1	02	Dec. 1896	800,000	S, L
C. O. D.	Colorado	500,000	500,000	1	01	March 1896	500,000	S, L
Calumet & Hecla	Michigan	100,000	2,500,000	25	15 00	Feb 1897	48,000,000	S, L
Centennial Eureka	Utah	80,000	1,500,000	50	1 00	Mar 1897	200,000	S, L
Champion	California	3,000	34,000	10	25	April 1897	30,000	S, L
Consolidated, California and Virginia	Nevada	216,000	21,600,000	100	25	March 1896	1,000,000	S, L
Conte	Nevada	100,000	10,000,000	100	01	Feb 1896	70,000	S, L
Copper Queen Consolidated	Arizona	200,000	2,000,000	10	25	June 1896	1,000,000	S, L
Crescent	Utah	21,000	600,000	25	10	July 1897	200,000	S, L
Daly	Utah	150,000	3,000,000	20	25	Mar. 1897	2,000,000	S, L
Deadwood Terra	Dakota	200,000	5,000,000	25	50	August 1896	1,000,000	S, L
De Lamar	Idaho	400,000	2,000,000	5	25	Oct. 1896	2,000,000	S, L
Dalton and Lark	Utah	2,500,000	2,500,000	1	00 1/2	August 1896	80,000	S, L
Elkhorn	Montana	200,000	1,000,000	5	06	June 1895	1,000,000	S, L
Elkton Consolidated	Colorado	1,250,000	1,250,000	1	02	May 1897	200,000	S, L
Florence	Montana	500,000	2,500,000	5	01	Jan. 1897	1,000,000	S, L
Franklin	Michigan	40,000	1,000,000	25	2 00	January, 1897	1,000,000	S, L
Galena	Utah	100,000	1,000,000	10	05	Jan. 1897	100,000	S, L
Garfield Bros.	Colorado	1,200,000	1,200,000	1	01	Dec. 1896	20,000	S, L
Geyser-Marion	Utah	60,000	300,000	5	03	June 1897	20,000	S, L
Golden Eagle	Colorado	1,000,000	1,000,000	1	01	Sep. 1896	100,000	S, L
Golden Eagle	Colorado	600,000	600,000	1	01	Feb. 1897	600,000	S, L
Gold Coin	Colorado	200,000	1,250,000	5	10	May 1897	100,000	S, L
Gold and Globe	Colorado	750,000	750,000	1	7 1/2	August 1896	600,000	S, L
Granite Mountain	Montana	100,000	10,000,000	25	20	Feb 1897	2,000,000	S, L
Hecla Consolidated	Montana	50,000	1,500,000	50	50	January 1897	2,000,000	S, L
Helena & Fresno	Idaho	500,000	2,500,000	5	04	August 1896	1,000,000	S, L
Honesty	Dakota	125,000	12,500,000	100	25	Jan. 1897	6,118,750	S, L
Hope	Montana	100,000	1,000,000	10	10	February 1897	662,250	S, L
Horn Silver	Utah	400,000	10,000,000	25	12 1/2	January 1896	5,080,000	S, L
Iowa	Colorado	1,000,000	310,000	1	00 1/2	Feb. 1897	65,000	S, L
Iron Mountain	Montana	500,000	5,000,000	10	06	Nov. 1896	492,500	S, L
Isabella	Colorado	2,250,000	5,000,000	100	02 1/2	Mar. 1897	258,750	S, L
Kennerly	Michigan	40,000	1,000,000	25	00	Dec. 1896	120,000	S, L
Kennedy	California	100,000	10,000,000	1	48	August 1897	625,000	S, L
Le Roi	British Col.	500,000	500,000	1	05	August 1895	1,000,000	S, L
Maid of Erin	Colorado	600,000	3,000,000	5	02	November 1896	200,000	S, L
Mayflower	California	60,000	1,200,000	10	10	December 1896	212,000	S, L
Minnesota	Minnesota	165,000	16,500,000	100	1 50	July 1896	1,210,000	S, L
Molte Gibson	Colorado	1,000,000	5,000,000	5	05	January 1897	1,080,000	S, L
Montana Lt	Montana	500,000	5,300,000	5	00 1/2	October 1896	2,800,000	S, L
Moose	Colorado	600,000	600,000	1	01	January 1896	80,000	S, L
Morning Star	California	2,400	210,000	100	4 00	June 1897	1,000,000	S, L
Moulton	Montana	400,000	2,000,000	5	05	February 1896	400,000	S, L
Mt. Rosa	Colorado	1,000,000	1,000,000	1	00 1/2	Oct. 1896	100,000	S, L
Mercer	Utah	200,000	5,000,000	25	12	June 1897	700,000	S, L
Mammoth	Utah	400,000	10,000,000	25	05	Nov. 1896	1,100,000	S, L
Moon Anchor Gold	Colorado	600,000	600,000	1	01	July 1896	24,000	S, L
New Elkhorn	Colorado	300,000	1,500,000	5	24	Sep 1896	72,000	S, L
New York & Hon. Rosario	Central A	150,000	1,500,000	10	10	Jan 1897	100,000	S, L
Napa	California	100,000	700,000	7	20	July 1897	800,000	S, L
New Idria Quicksilver	California	100,000	1,000,000	10	50	June 1897	100,000	S, L
North Star	Colorado	1,000,000	1,000,000	1	00 1/2	Jan 1895	10,000	S, L
Nugget	Utah	150,000	15,000,000	100	10	June 1897	11,000,000	S, L
Ontario	Michigan	50,000	1,250,000	25	1 00	February 1897	2,000,000	S, L
Oscoda	California	20,000	2,000,000	100	1 00	July 1893	422,500	S, L
Pacific Coast Borax	Montana	280,000	2,300,000	10	10	June 1897	1,022,000	S, L
Parrot	Colorado	51,500	5,150,000	100	05	June 1897	15,500	S, L
Pennsylvania Consolidated	Colorado	3,000,000	3,000,000	1	01	May 1897	1,000,000	S, L
Portland	Michigan	40,000	4,300,000	100	25	June 1897	1,823,911	S, L
Quicksilver Prof	Idaho	51,000	1,250,000	25	8 00	February 1897	900,000	S, L
Quincy	Colorado	200,000	1,000,000	5	10	December 1892	153,000	S, L
Red Cloud	Utah	1,000,000	1,000,000	100	00 1/2	March 1897	22,000	S, L
Sacramento	California	222,500	2,225,000	10	12	October 1893	1,559,933	S, L
Sierra Butte	New Mexico	500,000	500,000	1	4 05	December 1891	300,000	S, L
Silver, M	Colorado	250,000	5,000,000	20	10	March 1896	3,375,000	S, L
Small Hopes Consolidated	Utah	150,000	150,000	5	05	June 1897	46,000	S, L
South Swansea	California	100,000	10,000,000	100	10	March 1897	3,787,000	S, L
Standard	Missouri	250,000	2,500,000	10	25	Dec 1895	2,000,000	S, L
St. Joseph	Utah	150,000	3,000,000	20	25	June 1897	1,000,000	S, L
Silver King	Colorado	51,000	5,000,000	100	1 00	October 1896	1,000,000	S, L
Smuggler Union	Utah	210,000	100,000	5	05	June 1897	10,000	S, L
Swazee	Colorado	200,000	200,000	10	20	March 1897	100,000	S, L
Tom Bay	Michigan	50,000	1,250,000	25	3 00	Dec 1896	1,000,000	S, L
Tamarack	California	500,000	500,000	1	01	Apr 1897	70,000	S, L
Priority River	Colorado	1,250,000	1,250,000	1	01	June 1896	70,000	S, L
Union	Arizona	300,000	3,000,000	10	25	December 1893	600,000	S, L
United Verde	Utah	100,000	1,000,000	10	02	Feb 1897	17,000	S, L
Utah Consolidated	Utah	50,000	150,000	5	02	Sept 1896	10,000	S, L
Victor	Colorado	200,000	1,000,000	5	10	March 1897	76,000	S, L
War Eagle	British Col.	500,000	500,000	1	00	October 1896	167,000	S, L

S, Silver. U, Gold. L, Lead. C, Copper. Q, Quicksilver. I, Iron. B, Borax





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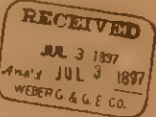
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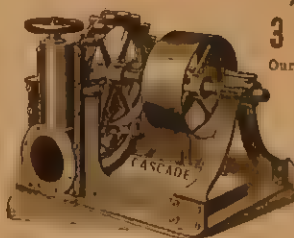
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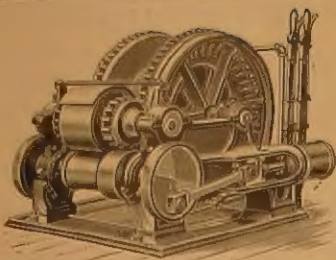
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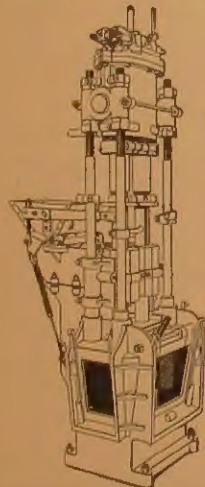
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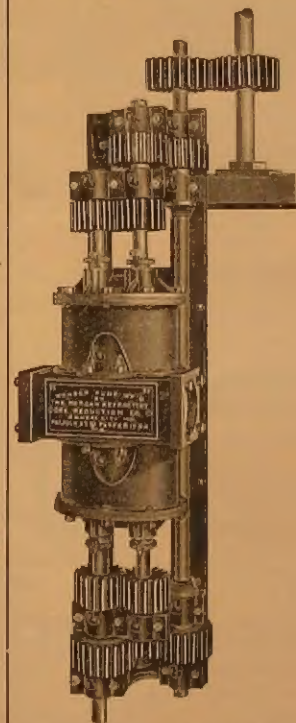
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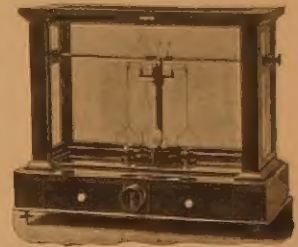


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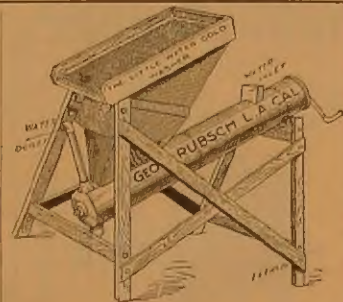
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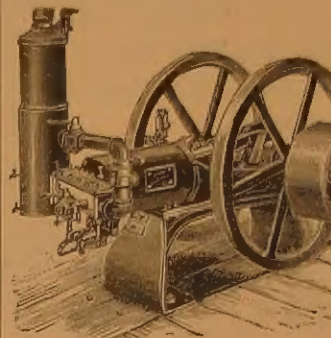
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" 17	54 1/2	11 25	3 60
" 16	54 1/2	11 25	3 60
" 15	54 1/2	11 25	3 60
" 14	54 1/2	11 25	3 60
" 13	54 1/2	11 25	3 60
" 12	54 1/2	11 25	3 60
" 11	54 1/2	11 25	3 60
" 10	54 1/2	11 25	3 60
" 9	54 1/2	11 25	3 60
" 8	54 1/2	11 25	3 60
" 7	54 1/2	11 25	3 60
" 6	54 1/2	11 25	3 60
" 5	54 1/2	11 25	3 60
" 4	54 1/2	11 25	3 60
" 3	54 1/2	11 25	3 60
" 2	54 1/2	11 25	3 60
" 1	54 1/2	11 25	3 60

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Albion.....	50	Franklin.....	11
Atlantic.....	25	Kearney.....	15
Boston & Mont.....	1 40 1/4	Oreola.....	16
Butte & Boston.....	25	Quincy.....	12
Calumet & Hecla.....	3 70	Tamarack.....	1 25
Centennial.....	90	Wolverine.....	10 1/4

## COLORADO SPRINGS STOCKS

Aetna.....	003 1/4	Ironclad.....	022 1/2
Alamo.....	02 1/2	Isabella.....	8 1/4
Anasconda.....	42	Isabella Stamp.....	42
Argonaut.....	27	Iowa.....	22
Bangkok-Corn Belle.....	02	Jack Pot.....	04 1/2
Banks.....	35	Jefferson.....	08 1/2
Ben Hur.....	02 1/2	Keystone.....	06
C & N.....	008	Maton.....	08
C & Manitou.....	01 1/2	Mollie Gibson.....	70
Crede & C.....	02	Monarch.....	05 1/2
Cross.....	01 1/2	Mount Rose.....	08
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Des Moines.....	02 1/2	Orphan Bell.....	11 1/2
Fannie Rawlins.....	10	Pharmacist.....	08 1/2
Favorito.....	10	Portland.....	00
Franklin.....	01 1/4	Peoples.....	01 1/4
Garfield Growers.....	04	Sacramento.....	02 1/2
Golden Eagle.....	00 1/4	Specimen.....	03 1/2
Golden Fleece.....	25	Star of the West.....	00
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Gold Standard.....	02 1/2	Union Gold.....	15 1/2
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Ingram C.....	15	Work.....	04
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Aetna.....	003 1/4	Elkton.....	82
Alamo.....	02 1/2	Eureka.....	009
Anasconda.....	42	Garfield Group.....	04
Arcadia.....	004	Golden Fleece.....	25
" Consolidated.....	01 1/4	Goldsmith.....	008 1/2
Argonaut.....	27	Gold Standard.....	02 1/2
Bangkok-C-Bell.....	02	Inley.....	003
Banks.....	35	Iron Glad.....	02 1/2
Ben Hur.....	02 1/2	Isabella.....	04 1/2
Bob Lee.....	04 1/2	Jack Pot.....	04 1/2
Boston & C.....	01 1/4	Jefferson.....	08 1/2
Chimbarazo.....	302	Mollie Gibson.....	70
C & N.....	008	New Zealand.....	05 1/2
Colo. C & M.....	01 1/4	Peoples.....	01 1/4
C C Con.....	08 1/2	Pharmacist.....	08 1/2

## HELENA, MONTANA

Am Den & M Co.....	85	Granite Mount.....	1 25
Bald Butte.....	2 25	Hope.....	50
Benton Group.....	10	Iron Mountain.....	40
Bl-Metallist.....	1 75	Moulton.....	30
Combination.....	35	Potomac.....	06

## NEW YORK.

Crown Point.....	18	Sierra Nevada.....	35
Con. Cal. & Va.....	1 50	Standard.....	1 75
Con. Cal. & Va.....	1 50	Standard.....	1 75
Hale & Norcross.....	90	Iron Silver.....	40
Homestake.....	80	Quicksilver.....	3 00
Mexican.....	30	Quicksilver ptd.....	17 00
Ontario.....	10	Bulwer.....	22
Ophir.....	71	Yellow Jacket.....	25
Plymouth.....	20	Deadwood.....	45

## SAN FRANCISCO.

Alpha Con.....	10	Hale & Norcross.....	90
Alta.....	24	Kentuck Con.....	03
Andes.....	10	Mexican.....	08
Belcher.....	20	Occidental Con.....	07
Best & Belcher.....	85	Ophir.....	63
Bullion.....	03	Overman.....	18
Caledonia.....	18	Potosi.....	14
Challenge.....	31	Savage.....	36
Chollar.....	72	Sierra Nevada.....	35
Confidence.....	85	Silver Hill.....	75
Con. Cal. & Va.....	1 20	Standard.....	1 75
Crown Point.....	17	Union Con.....	28
Eschquer.....	07	Utah.....	08
Gould & Curry.....	42	Yellow Jacket.....	27

## SALT LAKE CITY.

Ajax.....	45	Malvern.....	25
Alliance.....	25	Mammoth.....	1 45
Anchor.....	80	Mercur.....	7 80
Bogan.....	05	Morgan.....	22
Buckeye.....	65	Northern Light.....	80
Bull, Beck.....	5 40	Omaha.....	30
Cent. Butte.....	45	Ontario.....	8 50
Chloride Point.....	27 1/2	Oreand.....	40
Dalton.....	02 1/2	Richmond Ana.....	09
Daly.....	3 00	conda.....	09
Daly West.....	8 50	Rover.....	35
Dalton & Lark.....	10	Sacramento.....	20
Deater.....	1 85	Silver King.....	14 00
Earle.....	04 1/2	Sloan Con.....	1 00
East Golden Gate.....	01	Sunbeam.....	57
Four Aces.....	08	Sunshine.....	35
Galena.....	80	Swansea.....	2 25
Gayer-Marion.....	1 32 1/2	So Swansea.....	1 80
Horn Silver.....	1 75	Tetro.....	05
Little Pittsburg.....	03	Utah.....	08
Lucky Bill.....	12 1/2	Utah Con.....	50

## MEXICO

Name of Company	State	Price
Angustiana.....	Guantanamo	\$ 500
Asturiana y Anexa.....	Zacatecas	220
Cerro Colorado.....	Chihuahua	10
Concepcion y Anexa.....	S. Luis Potosi	180
El Oro.....	Guantanamo	65
do, pres.....		08
Luz de Borda.....	Michoacan	20
do, Free Stock.....		20
Los de Maravillas.....	Hidalgo	180
Real del Monte.....		1,100
Rosario y Anexa.....	Durango	50
do, pref.....		50
San Rafael del Oro.....	Guantanamo	10
Sia, Gorr y Anexa.....		187
do, Free Stock.....		321
Sta. Maria de la Paz.....	S. Luis Potosi	180
Tlaquingo.....	Veracruz	18
Zamateshucan (gold).....	Veracruz	100
Zona Min de Posos.....	Guantanamo	10

NOTE.—The above Mexican stocks are figured on the basis of Mexican silver



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Cordwood,  
Etc.



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Automatic Dumping Device

\*  
EMPIRE, NEVADA, April 17th, 1898

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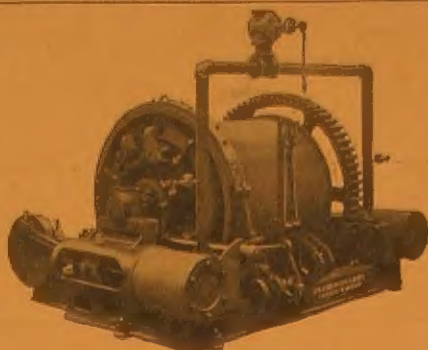
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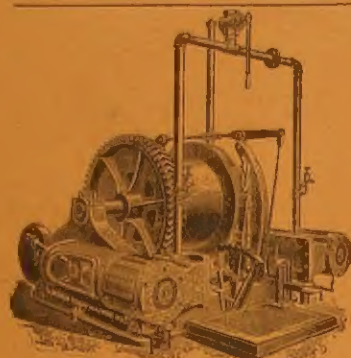
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